

Remarks/Arguments

Claims 1-20 are pending in this Application. In the Office Action mailed on the date of March 7, 2006, the Examiner on page 2 rejected Claims 1-18 under 35 U.S.C. § 102(a) as being anticipated by Zyryanov, et al., an Internet Publication published on the Web on October 25, 2002, (“Supramolecular fixation of NO₂ with calyx[4]arenas,” Chem Commun 2002:2792-3). On page 5 of the Office Action, the Examiner rejected Claims 1-18 under 35 U.S.C. § 102(b) as being anticipated by Lamartine et al. (US Patent No. 6,136,071). On page 6 of the Office Action, the Examiner rejected Claims 19 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Batelaan et al. (US Patent No. 5,434,208) in view of either Holdcroft et al. (US Patent No. 5, 561,030) or Smith et al. (US Patent No. 6,605,236).

Claims Rejections - 35 U.S.C. § 102(a)

With regard to the rejection of Claims 1-18 as being anticipated by Zyryanov, et al., Applicant respectfully submits with this Amendment a Declaration under 37 C.F.R. § 1.131 that shows that Applicant conceived of the invention set forth in Claims 1-20 prior to the date of October 25, 2002, said Declaration including documented evidence of such conception and due diligence from prior to said date up of October 25, 2002, to the date of filing of the instant Application. Accordingly, withdrawal of the Zyryanov reference with respect to the claims currently pending in this application is respectfully requested. The evidence set forth in the Declaration indicates not only that Applicant conceived the invention disclosed and claimed in the above-identified patent application in the United States prior to October 25, 2002, including, for example, a composition as set forth in Claim 16; a method of purifying compounds as set forth in Claim 15; and devices as set forth in Claims 1 and 11; but that Applicant reduced the invention to practice prior to October 25, 2002, which is essentially set forth in Exhibit A to the Declaration. Accordingly, withdrawal of the Zyryanov reference is respectfully requested. With this withdrawal, Applicant believes all claims to be in condition for allowance and respectfully requests entry and allowance of Claims 1-20.

Claims Rejections - 35 U.S.C. § 102(b)

With regard to the rejection of Claims 1-18 under 35 U.S.C. § 102(b) as being anticipated by Lamartine et al. (heretin “Lamartine”), Applicant respectfully submits that Lamartine does not teach or suggest, expressly or inherently, each and every element of Claims 1-18. For example, Lamartine

does not teach or suggest “a calix[4]arene compound capable of forming a complex with at least one NO^+ cation” or “wherein a detectable charge-transfer reaction occurs between the NO^+ cation and the calix[4]arene” or “wherein NO^+ is derived from an oxide of nitrogen in a form other than nitric oxide.” Lamartine teaches that a reaction occurs between a calixarene and an amine, thiol or sulfide (Col. 2, ll. 51-60); however, Lamartine does not teach or suggest any complexation, let alone one specific to Applicant’s claimed invention. In fact, as is known to one of ordinary skill in the art, there is no known complexation reaction that occurs between calixarenes and amines, thiols or sulfides, particularly where the amine, thiol or sulfide is trapped inside a calixarene cavity. For example, the reaction between amines and calixarenes as provided in Lamartine are known to include the formation of simple salts with the phenolic calixarenes, not a complexation and a charge-transfer reaction between an NO^+ cation and the calix[4]arene. Accordingly, Applicant submits that, contrary to the Examiner’s statement, any reaction occurring in Lamartine between a calixarene and an amine, thiol or sulfide is not equivalent to Applicant’s claimed invention. As such, Claims 1-18 are not anticipated by Lamartine because Lamartine does not teach or suggest, expressly or inherently, each and every element of Claims 1-18. Applicant respectfully requests entry and allowance of these claims for the reasons set forth above.

Claims Rejections - 35 U.S.C. § 103(a)

With regard to the rejection of Claims 19 and 20 under 35 U.S.C. § 103(a) as being obvious over Batelaan et al. (herein “Batelaan”) in view of Holdcroft et al. (herein “Holdcroft”) or Smith et al. (herein “Smith”), Applicant submits that Claims 19 and 20. Applicant respectfully submits amended Claims 19 and 20 to reflect a switch comprising “a calix[4]arene-nitrosonium complex by noncovalent forces.” [Underlined text shows amendment] Applicant submits that Batelaan does not teach the claimed invention as a whole, including “a calix[4]arene-nitrosonium complex by noncovalent forces” or “the nitrosonium is capable of changing between a free and complexed state” or “wherein the nitrosonium is derived from an oxide of nitrogen in a form other than nitric oxide.” Contrary to the Examiner’s statement that Batelaan “discloses an optical waveguide or optical switch (column 1, lines 29-32), comprising calix[4]arene (column 3, lines 24-26). The calyx[4]arene may be complexed with nitrogen-containing compounds (column 5, lines 15-31),” Applicant points out that in the Batelaan reference, the calixarenes do not form a complex nor do they require complexation for switching. In fact, in Batelaan, calixarenes do not complex nitrogen-containing compounds at all, but are chemically attached (functionalized covalently) to nitrogen-containing groups (Abstract; Col. 3, ll. 42-45), groups that do not exist in free form unlike the

nitrosonium cation as claimed with the present invention. As such, Batelaan requires a covalent reaction not a complexation by noncovalent forces and the covalent reaction of Batelaan includes a covalent interaction with only non-free-form groups, some of which may contain a nitrogen. As such, Applicant submits that Batelaan teaches away from Applicant's claimed invention. In addition, one of ordinary skill in the art would never look to Batelaan's "calix(4)arenas functionalized with nitrostilbene groups, cyanostilbene groups, sulfur stilbene groups sulfonate stilbene groups, azobenzenes or benylidene aniline compounds" (see Abstract) to prepare Applicant's claimed invention of "a calix[4]arene-nitrosonium complex by noncovalent forces." Accordingly, Applicant further submits that Batelaan is unpredictable with regards to Applicant's amended Claims 19 and 20. Applicant points out that some predictability is required for a showing of obviousness. Furthermore, a teaching away from Applicant's claimed invention, an inability to teach or suggest Applicant's claimed invention as a whole means, and an unpredictability with regards to Applicant's claimed invention means that there is no suggestion or motivation, either in the Batelaan reference itself or to one of ordinary skill in the art, to modify Batelaan in order to provide amended Claims 19 or 20; nor, then, is there any suggestion or motivation to combine Batelaan with any other reference, including Holdcroft or Smith. For this reason, there is no reasonable expectation of any success. In view of all factual information, amended Claims 19 and 20 and all claims depending therefrom are not anticipated by nor as a whole obvious over Batelaan alone or in view of either Holdcroft or Smith. Applicant respectfully requests entry and allowance of amended Claims 19 and 20.

Conclusion

In light of the remarks and arguments presented with this Amendment, Applicant respectfully submits that the pending claims provided in the Listing of Claims beginning on page 2 of this paper are in condition for allowance. No new matter is introduced with this Amendment. Accordingly, favorable consideration for and allowance of all pending claims are respectfully requested.

With this Amendment, Applicant submits a Petition for Extension of Time for one-month with fees due. Applicant believes no additional fees are due with this response. If this is incorrect, Applicant hereby authorizes the Commissioner to charge the additional fees, other than the issue fee, that may be required by this paper to Deposit Account 07-0153.

If the Examiner has any questions or comments, or if further clarification is required, it is requested that the Examiner contact the undersigned at the telephone number listed below.

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Respectfully submitted,

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